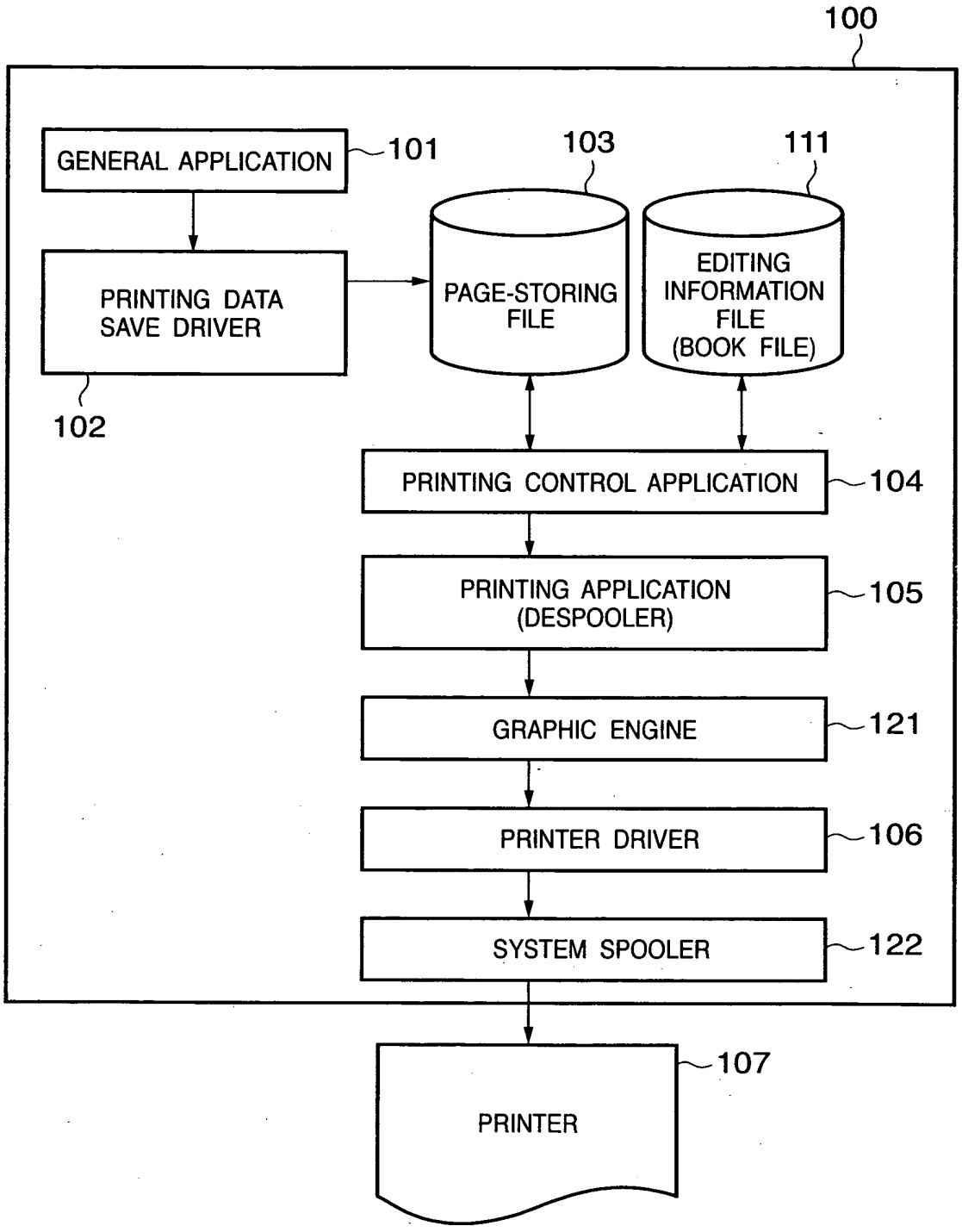
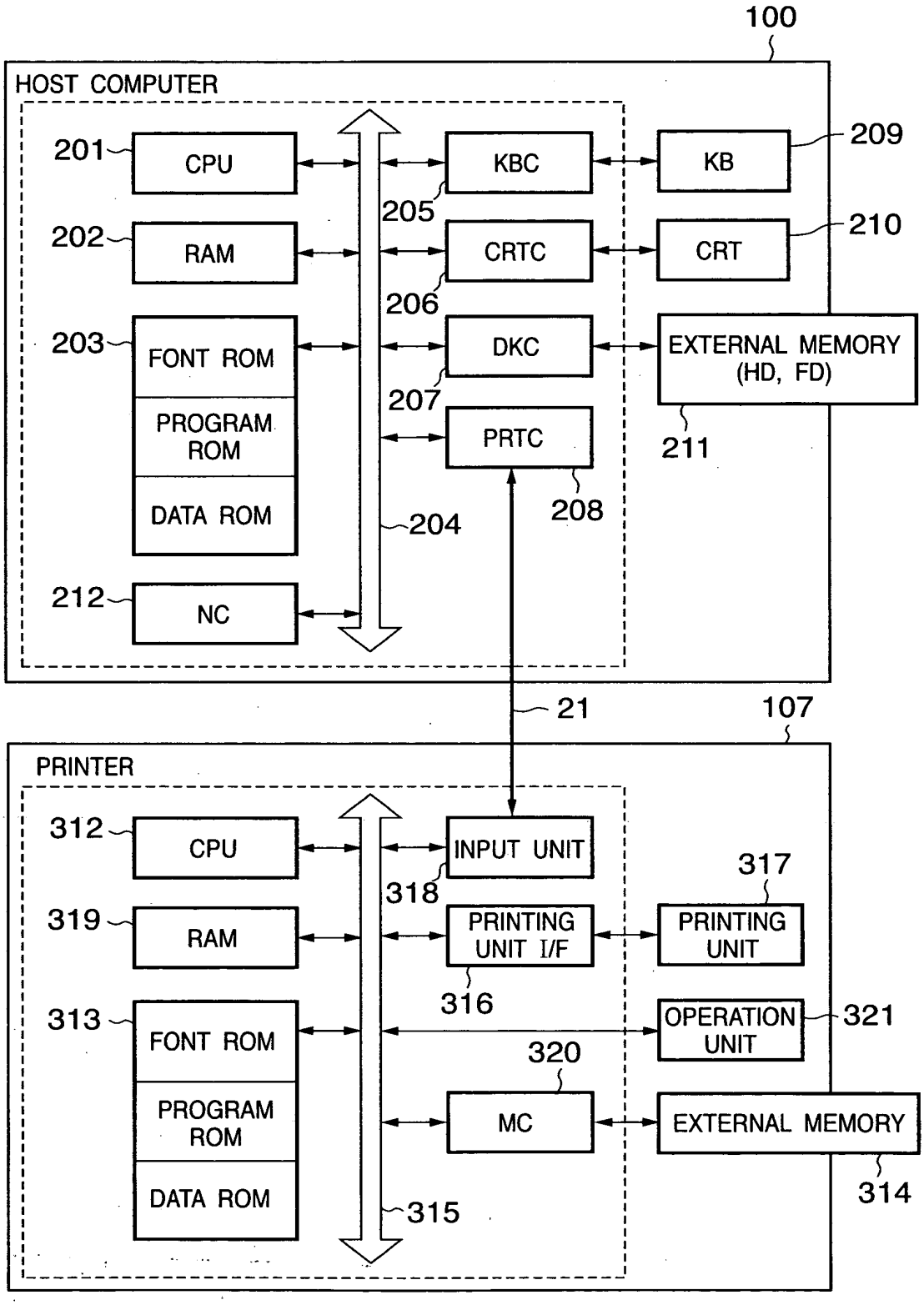
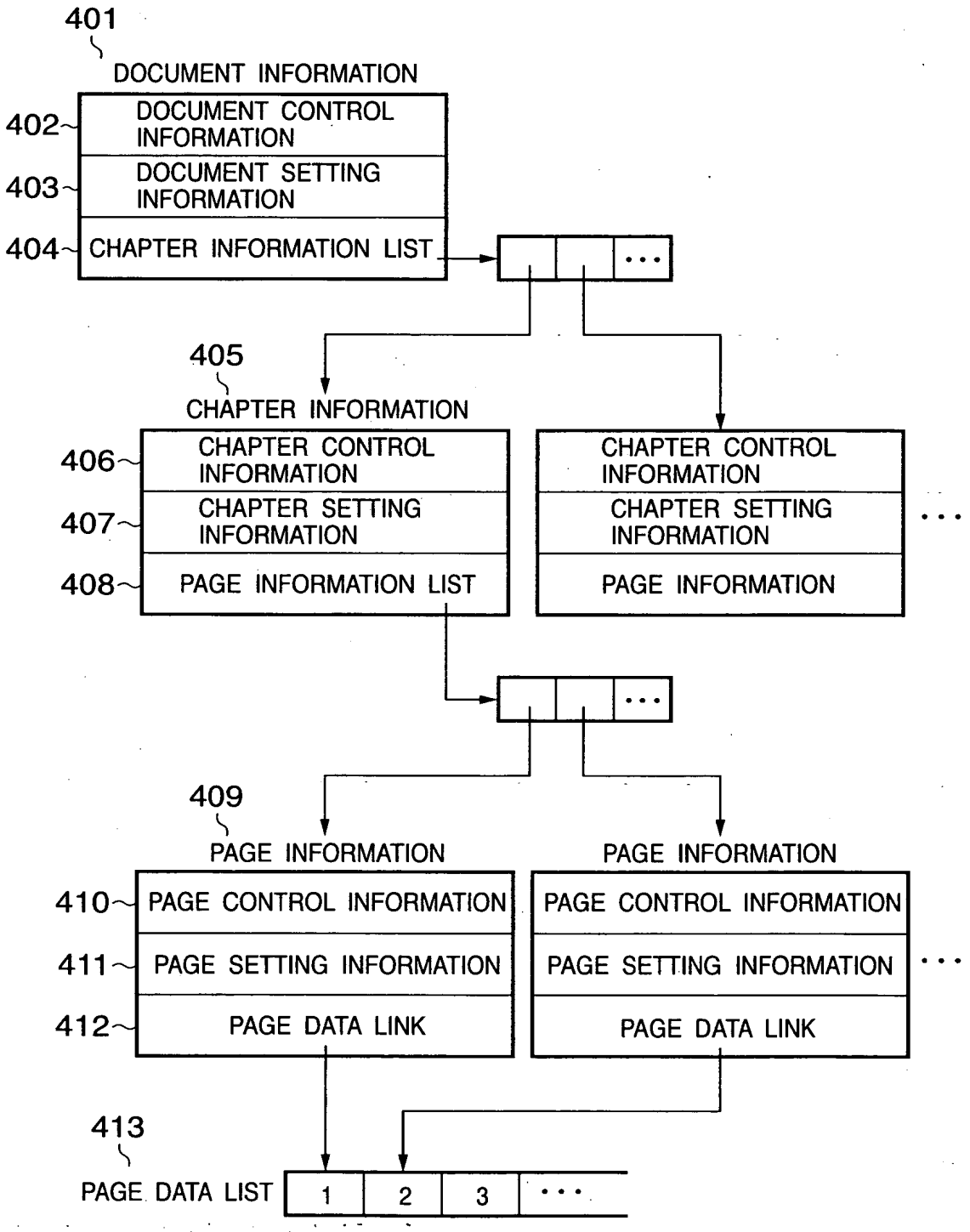
# FIG. 1


100
GENERAL APPLICATION
101
103
111
PRINTING DATA SAVE DRIVER
PAGE-STORING FILE
EDITING INFORMATION FILE (BOOK FILE)
102
PRINTING CONTROL APPLICATION
104
PRINTING APPLICATION (DESPOOLER)
105
GRAPHIC ENGINE
121
PRINTER DRIVER
106
SYSTEM SPOOLER
122
PRINTER
107

# FIG. 2


100
HOST COMPUTER
201
CPU
202
RAM
203
FONT ROM
PROGRAM ROM
DATA ROM
212
NC
204
KBC
205
CRTC
206
DKC
207
PRTC
208
KB
209
CRT
210
EXTERNAL MEMORY (HD, FD)
211
21
107
PRINTER
312
CPU
319
RAM
313
FONT ROM
PROGRAM ROM
DATA ROM
315
INPUT UNIT
318
PRINTING UNIT I/F
316
MC
320
317
PRINTING UNIT
OPERATION UNIT
321
EXTERNAL MEMORY
314

# FIG. 3


401
DOCUMENT INFORMATION
402
DOCUMENT CONTROL INFORMATION
403
DOCUMENT SETTING INFORMATION
404
CHAPTER INFORMATION LIST
405
CHAPTER INFORMATION
406
CHAPTER CONTROL INFORMATION
407
CHAPTER SETTING INFORMATION
408
PAGE INFORMATION LIST
CHAPTER CONTROL INFORMATION
CHAPTER SETTING INFORMATION
PAGE INFORMATION
409
PAGE INFORMATION
PAGE INFORMATION
410
PAGE CONTROL INFORMATION
411
PAGE SETTING INFORMATION
412
PAGE DATA LINK
PAGE CONTROL INFORMATION
PAGE SETTING INFORMATION
PAGE DATA LINK
413
PAGE DATA LIST
1
2
3

# FIG. 4A

| NO | ATTRIBUTE INFORMATION | | REMARKS |
|---|---|---|---|
| 1 | PRINT METHOD | SINGLE-SIDED / DOUBLE-SIDED / BOOKBINDING PRINTING | |
| 2 | PAPER SIZE | ORIGINAL SIZE / FIXED SIZE | • Z-FOLD IS DESIGNATED WHEN "A4 + A3", "B4 + B3", OR "LETER + LEDGER (11 × 17)" IS DESIGNATED<br>• ORIGINAL SIZE OF FIRST CHAPTER / PAGE IS AUTOMATICALLY SELECTED WHEN BOOKBINDING PRINTING OR N-up PRINTING IS DESIGNATED |
| 3 | PAPER DIRECTION | PORTRAIT / LANDSCAPE | • SELECTABLE ONLY FOR FIXED SIZE |
| 4 | BINDING MARGIN / BINDING DIRECTION | | • SHIFT / ENLARGEMENT & REDUCTION CAN BE DESIGNATED |
| 5 | N-up PRINTING | NUMBER OF PAGES / LAYOUT ORDER / BOUNDARY / LAYOUT POSITION, etc. | • LAYOUT POSITION : NINE PATTERNS<br>• X1 PRINTING CAN BE DESIGNATED |
| 6 | ENLARGEMENT / REDUCTION | ON / OFF | ON / OFF CAN BE AUTOMATICALLY DESIGNATED WHEN PAPER SIZE IS FIXED SIZE OR N-up PRINTING IS SELECTED |
| 7 | WATERMARK | | • WATERMARK CAN BE DESIGNATED INDIVIDUALLY IN LOGICAL OR PHYSICAL PAGES<br>• ALL CHAPTERS / PAGES ARE TARGETED |

# FIG. 4B

| | | | |
|---|---|---|---|
| 8 | HEADER / FOOTER | | • HEADER / FOOTER CAN BE DESIGNATED INDIVIDUALLY IN LOGICAL OR PHYSICAL PAGES<br>• ALL CHAPTERS / PAGES ARE TARGETED |
| 9 | DELIVERY METHOD | STAPLING / PUNCH HOLE | • STAPLING / PUNCHING ONLY IN SINGLE- / DOUBLE-SIDED PRINTING<br>• STAPLING AT ONE / TWO PORTIONS |
| 10 | DETAILS OF BOOKBINDING | OPENING DIRECTION / SADDLE STITCH / ENLARGEMENT & REDUCTION DESIGNATION / BINDING MARGIN / FASCICLE DESIGNATION, etc. | • ONLY IN BOOKBINDING PRINTING |
| 11 | FRONT / BACK COVER | | • PRINTING IS DESIGNATED FOR 1/2 FRONT COVER OR 1/2 BACK COVER<br>• FEED PORT (INCLUDING INSERTER) IS DESIGNATED |
| 12 | INDEX SHEET | | • PRINTING OF CHARACTER STRING ON INDEX PORTION OR ANNOTATION ON INDEX SHEET CAN BE SET<br>• BOOKBINDING PRINTING CANNOT BE DESIGNATED |
| 13 | SLIP SHEET | | • FEED PORT (INCLUDING INSERTER) IS DESIGNATED<br>• ORIGINAL DATA CAN BE PRINTED ON INSERTED PAPER<br>• BOOKBINDING PRINTING CANNOT BE DESIGNATED |
| 14 | CHAPTERING | "NONE" / "PAGE BREAK" / "PAPER CHANGE" | • "PAPER CHANGE" IS FIXED WHEN INDEX SHEET OR SLIP SHEET IS DESIGNATED<br>• "PAPER CHANGE" IN SINGLE-SIDED PRINTING |

# FIG. 5

| NO | ATTRIBUTE INFORMATION | | REMARKS |
|---|---|---|---|
| 1 | PAPER SIZE | ORIGINAL SIZE / FIXED SIZE | • "PAPER CHANGE" IS AUTOMATICALLY DESIGNATED WHEN FIXED SIZE IS SELECTED<br>• WHEN A PLURALITY OF PAPER SHEETS ARE SELECTED BY BOOK, PAPER SIZE CAN BE CHANGED TO ONLY DESIGNATED PAPER. PAPER SIZE CAN BE CHANGED EVEN WITH DESIGNATION COMPLYING WITH BOOK |
| 2 | PAPER DIRECTION | PORTRAIT / LANDSCAPE | • SELECTABLE ONLY FOR FIXED SIZE |
| 3 | N-up PRINTING DESIGNATION | NUMBER OF PAGES / LAYOUT ORDER / BOUNDARY / LAYOUT POSITION, etc. | • LAYOUT POSITION : NINE PATTERNS<br>• X1 PRINTING CAN BE DESIGNATED |
| 4 | ENLARGEMENT / REDUCTION | ON / OFF | • ON / OFF CAN BE AUTOMATICALLY DESIGNATED WHEN PAPER SIZE IS FIXED SIZE OR N-up PRINTING IS SELECTED |
| 5 | WATERMARK | DISPLAY / NON-DISPLAY | • WHETHER TO DISPLAY ALL WATERMARKS DESIGNATED BY BOOK IS DESIGNATED |
| 6 | HEADER / FOOTER | DISPLAY / NON-DISPLAY | • WHETHER TO DISPLAY ALL HEADERS / FOOTERS DESIGNATED BY BOOK IS DESIGNATED |
| 7 | DELIVERY METHOD | STAPLING | • STAPLING CAN BE SET OFF WHEN STAPLING IS DESIGNATED BY BOOK<br>DEFAULT VALUE IS "ON" |

# FIG. 6

| NO | ATTRIBUTE INFORMATION | | REMARKS |
|---|---|---|---|
| 1 | PAGE ROTATION DESIGNATION | | • 0°/90°/180°/270° CAN BE DESIGNATED |
| 2 | WATERMARK | DISPLAY / NON-DISPLAY | • WHETHER TO DISPLAY ALL WATERMARKS DESIGNATED BY BOOK IS DESIGNATED |
| 3 | HEADER / FOOTER | DISPLAY / NON-DISPLAY | • WHETHER TO DISPLAY ALL HEADERS / FOOTERS DESIGNATED BY BOOK IS DESIGNATED |
| 4 | ZOOM | 50% - 200% | • MAGNIFICATION RELATIVE TO SIZE WHICH IS FIT IN VIRTUAL LOGICAL PAGE REGION AND SET AS 100% IS DESIGNATED |
| 5 | LAYOUT POSITION | | • NINE FIXED PATTERNS AND ARBITRARY POSITION IS DESIGNATED |
| 6 | ANNOTATION | | |
| 7 | VARIABLE ITEM | | |
| 8 | PAGE SEPARATION | | |

FIG. 7

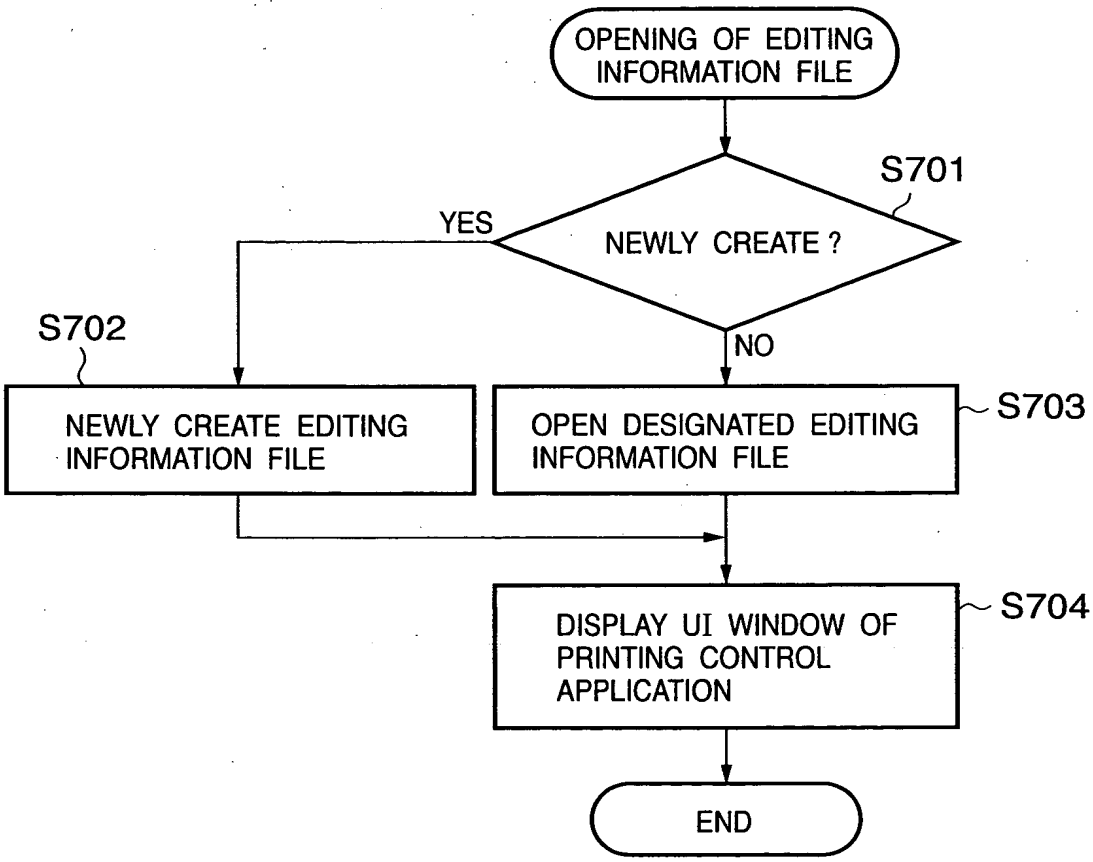

OPENING OF EDITING INFORMATION FILE
S701
NEWLY CREATE ?
YES
NO
S702
NEWLY CREATE EDITING INFORMATION FILE
OPEN DESIGNATED EDITING INFORMATION FILE
S703
DISPLAY UI WINDOW OF PRINTING CONTROL APPLICATION
S704
END

FIG. 8

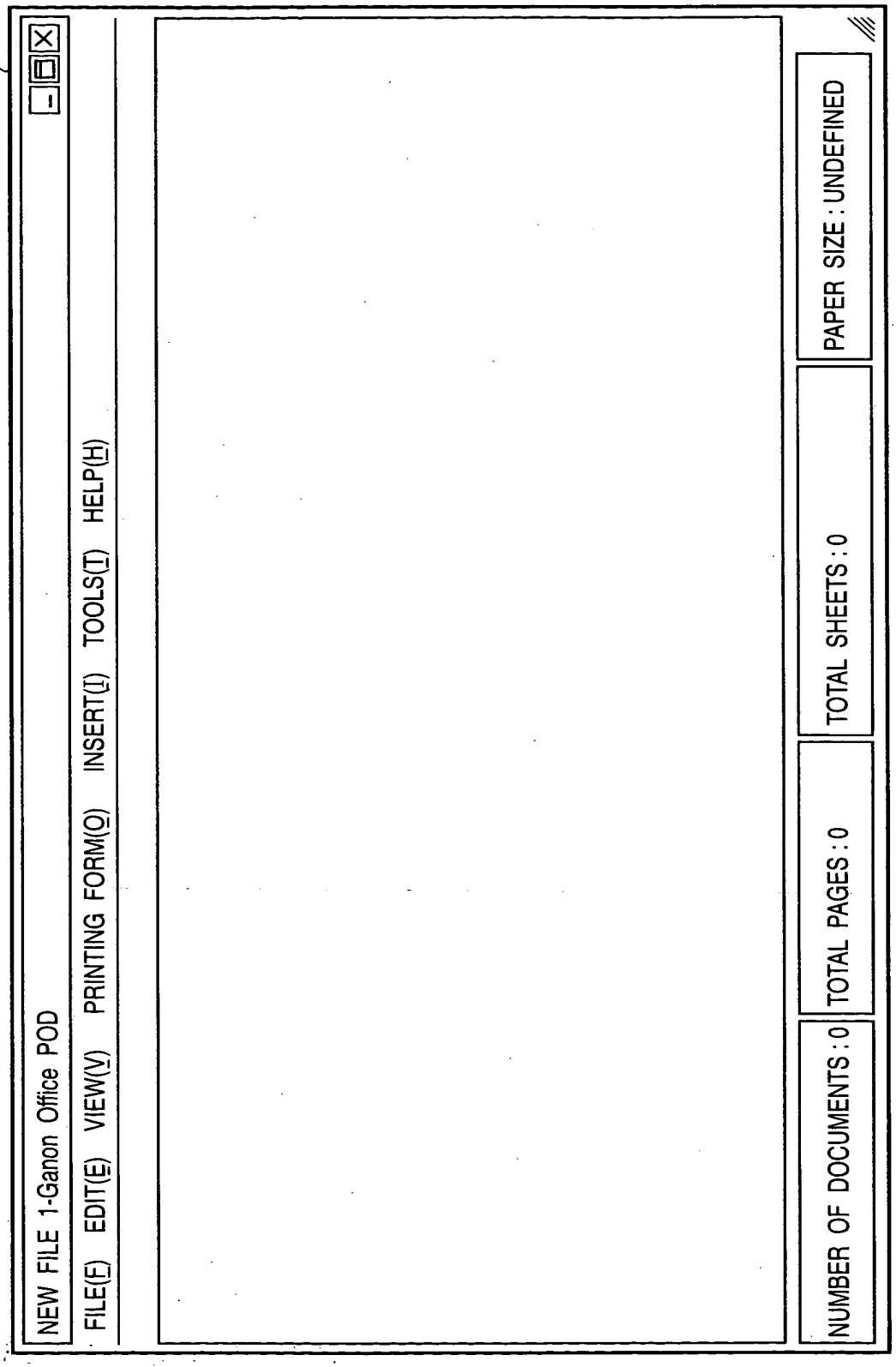

800
NEW FILE 1-Ganon Office POD
FILE(F) EDIT(E) VIEW(V) PRINTING FORM(O) INSERT(I) TOOLS(T) HELP(H)
NUMBER OF DOCUMENTS : 0
TOTAL PAGES : 0
TOTAL SHEETS : 0
PAPER SIZE : UNDEFINED

FIG. 9

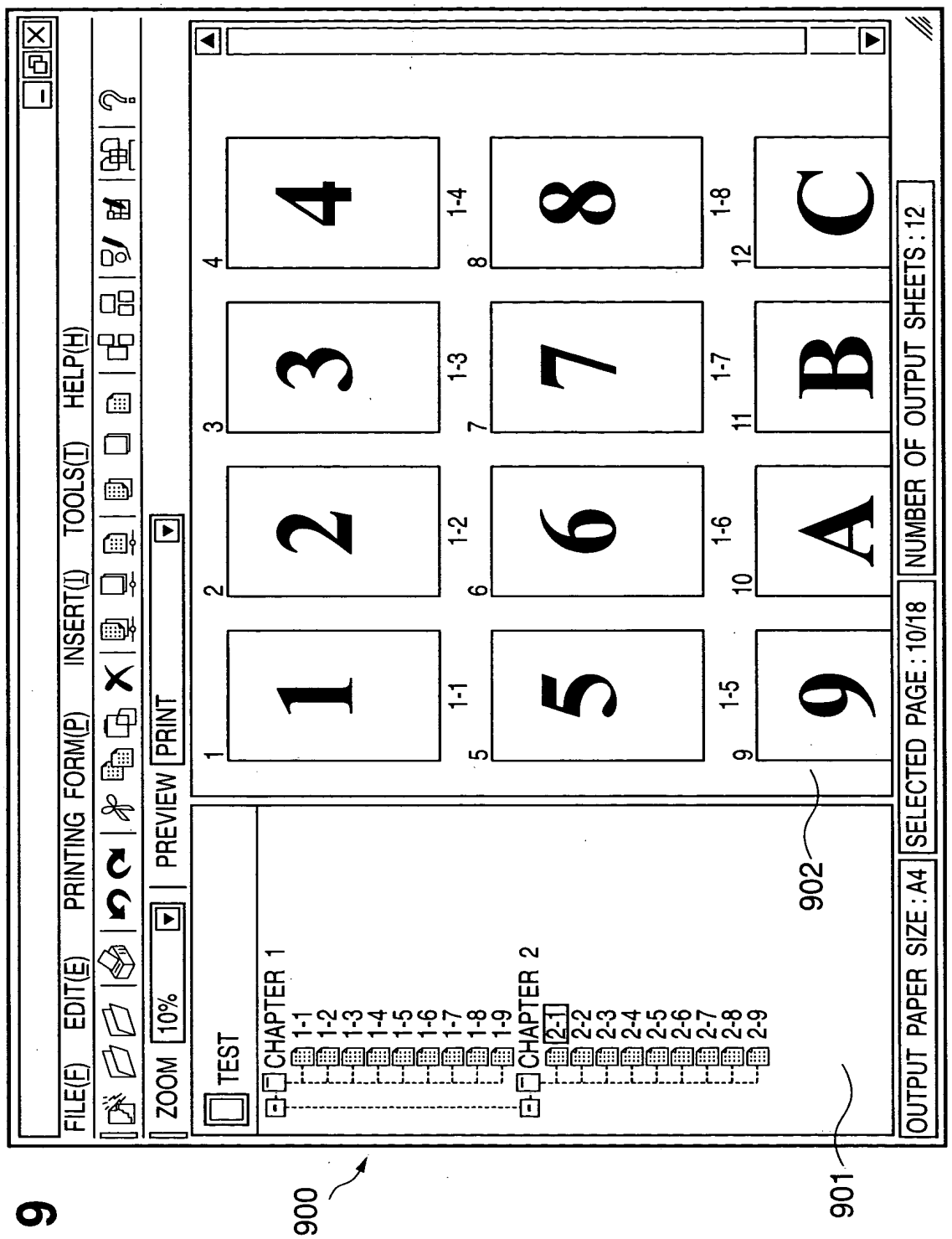

FILE(F) EDIT(E) PRINTING FORM(P) INSERT(I) TOOLS(T) HELP(H)
ZOOM 10% PREVIEW PRINT
TEST
CHAPTER 1
1-1 1-2 1-3 1-4 1-5 1-6 1-7 1-8 1-9
CHAPTER 2
2-1 2-2 2-3 2-4 2-5 2-6 2-7 2-8 2-9
1 2 3 4
5 6 7 8
9 A B C
1-1 1-2 1-3 1-4
1-5 1-6 1-7 1-8
OUTPUT PAPER SIZE : A4
SELECTED PAGE : 10/18
NUMBER OF OUTPUT SHEETS : 12
900
901
902

FIG. 10

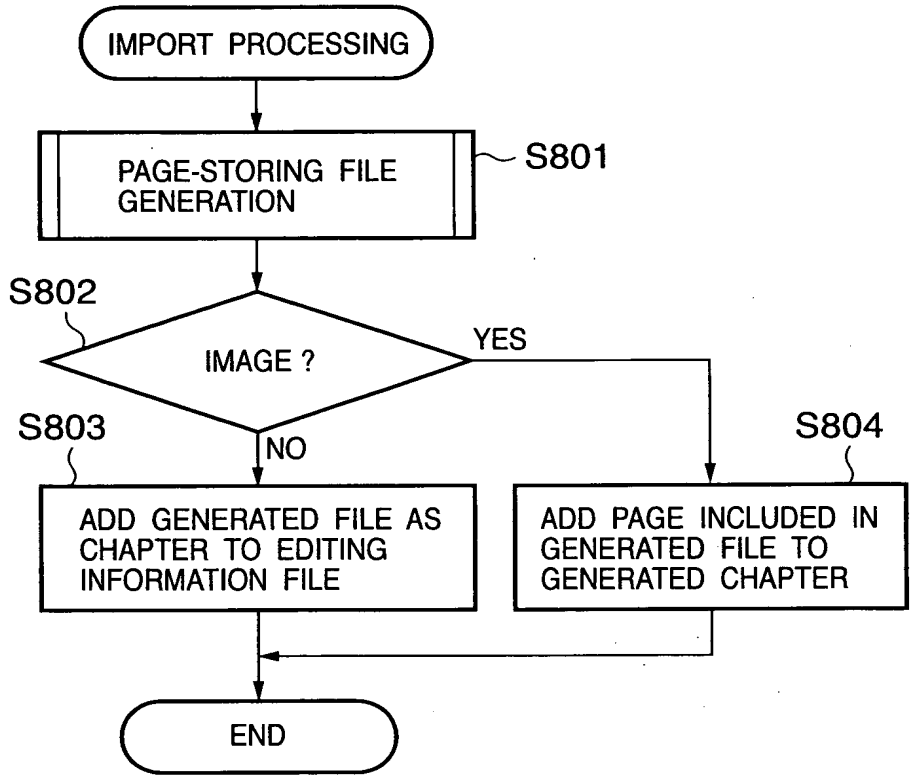

IMPORT PROCESSING
PAGE-STORING FILE GENERATION
S801
S802
IMAGE ?
YES
NO
S803
S804
ADD GENERATED FILE AS CHAPTER TO EDITING INFORMATION FILE
ADD PAGE INCLUDED IN GENERATED FILE TO GENERATED CHAPTER
END

FIG. 11

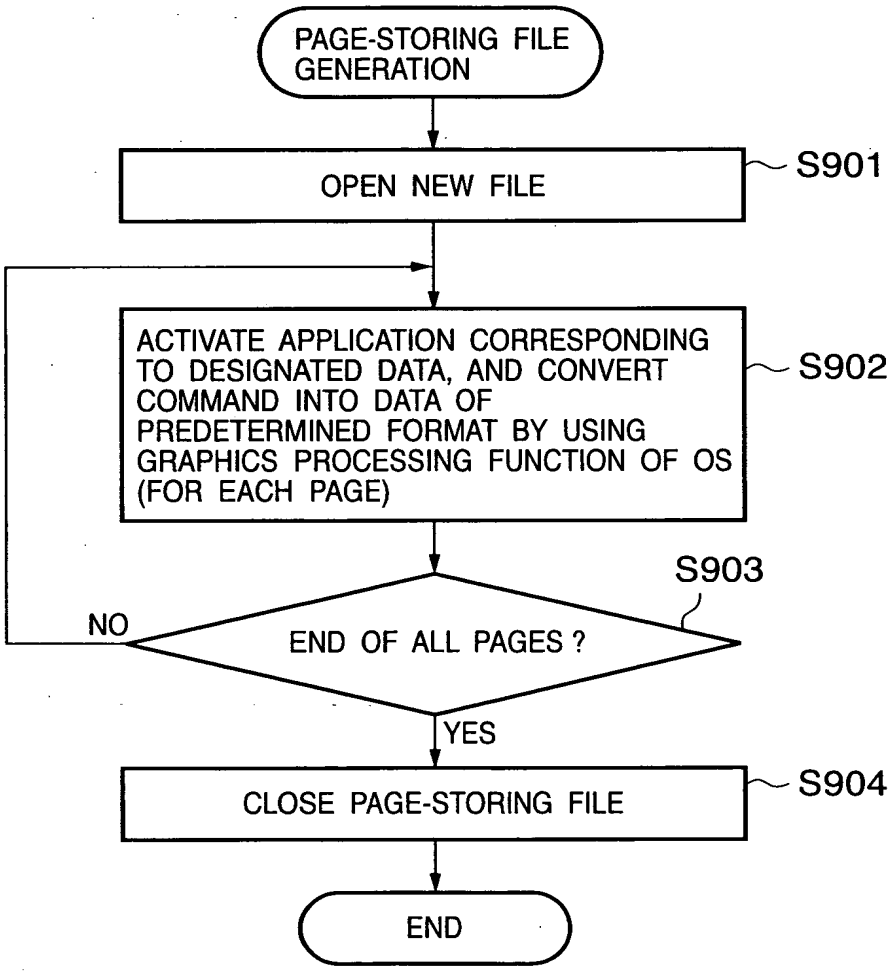

PAGE-STORING FILE GENERATION
OPEN NEW FILE
S901
ACTIVATE APPLICATION CORRESPONDING TO DESIGNATED DATA, AND CONVERT COMMAND INTO DATA OF PREDETERMINED FORMAT BY USING GRAPHICS PROCESSING FUNCTION OF OS (FOR EACH PAGE)
S902
S903
END OF ALL PAGES ?
NO
YES
CLOSE PAGE-STORING FILE
S904
END

FIG. 12

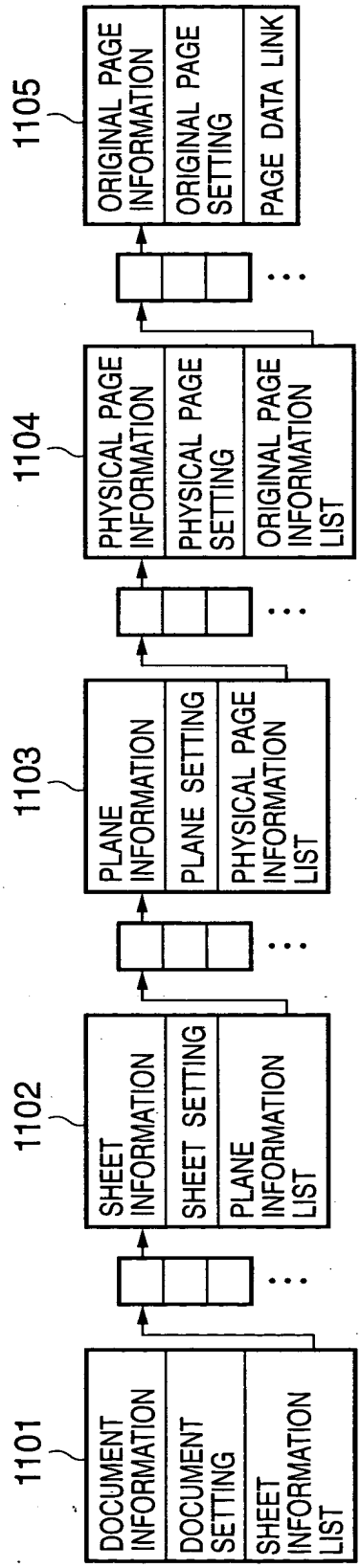

1101
DOCUMENT INFORMATION
DOCUMENT SETTING
SHEET INFORMATION LIST
1102
SHEET INFORMATION
SHEET SETTING
PLANE INFORMATION LIST
1103
PLANE INFORMATION
PLANE SETTING
PHYSICAL PAGE INFORMATION LIST
1104
PHYSICAL PAGE INFORMATION
PHYSICAL PAGE SETTING
ORIGINAL PAGE INFORMATION LIST
1105
ORIGINAL PAGE INFORMATION
ORIGINAL PAGE SETTING
PAGE DATA LINK

FIG. 13

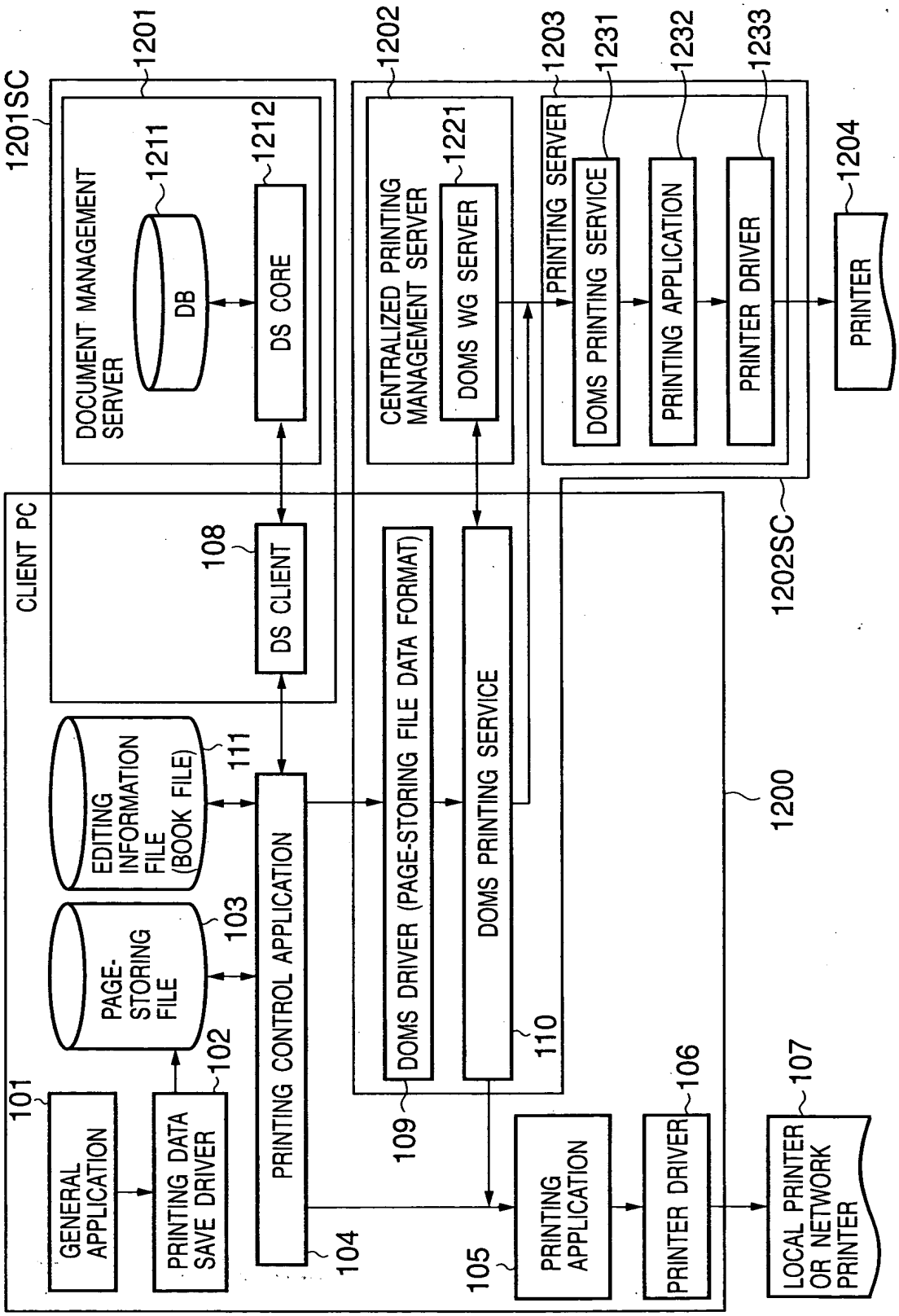

1201SC
1201
DOCUMENT MANAGEMENT SERVER
1211
DB
1212
DS CORE
1202
CENTRALIZED PRINTING MANAGEMENT SERVER
1221
DOMS WG SERVER
1203
PRINTING SERVER
1231
DOMS PRINTING SERVICE
1232
PRINTING APPLICATION
1233
PRINTER DRIVER
1204
PRINTER
CLIENT PC
108
DS CLIENT
EDITING INFORMATION FILE (BOOK FILE)
111
PAGE-STORING FILE
103
PRINTING CONTROL APPLICATION
DOMS DRIVER (PAGE-STORING FILE DATA FORMAT)
DOMS PRINTING SERVICE
1202SC
1200
101
GENERAL APPLICATION
PRINTING DATA SAVE DRIVER
102
104
109
110
105
PRINTING APPLICATION
PRINTER DRIVER
106
LOCAL PRINTER OR NETWORK PRINTER
107

FIG. 14

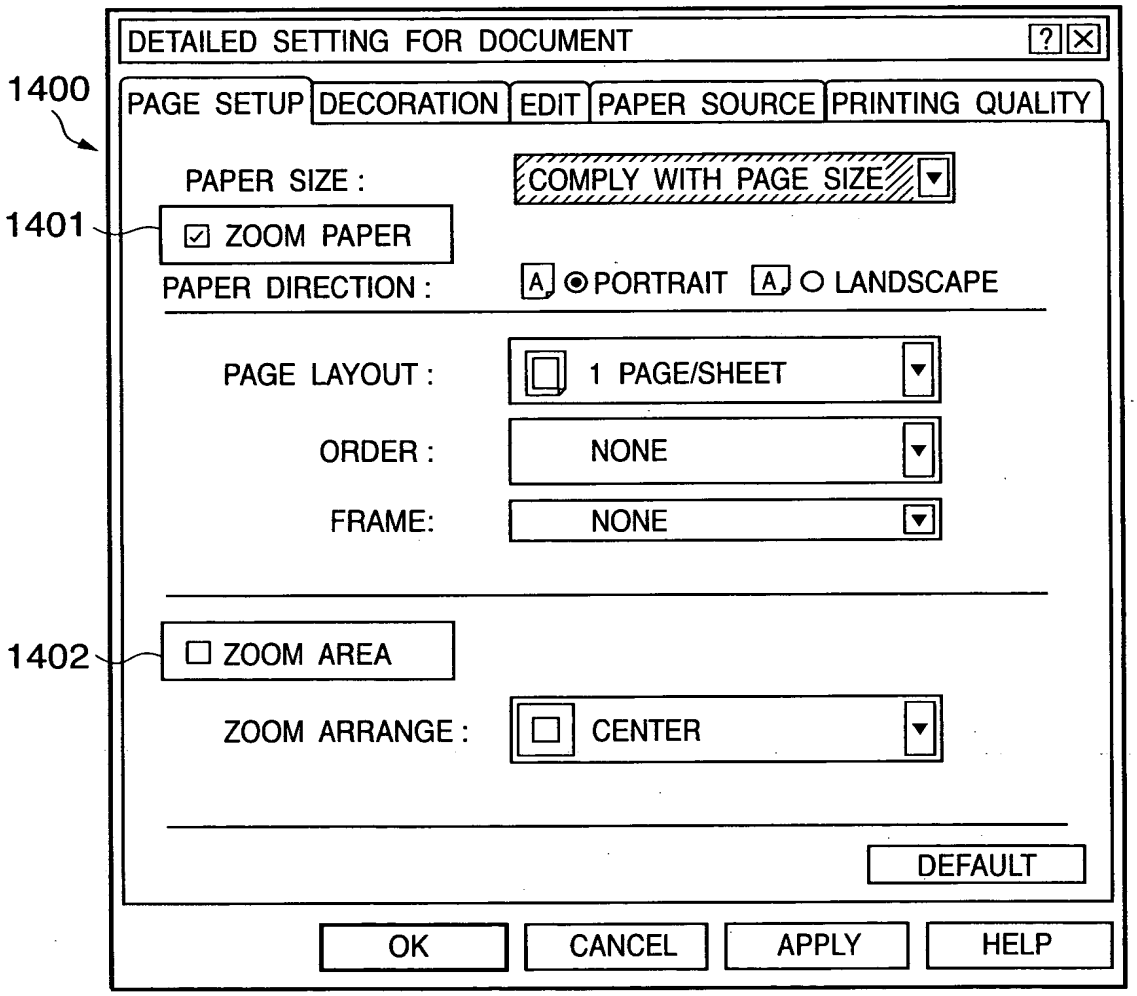
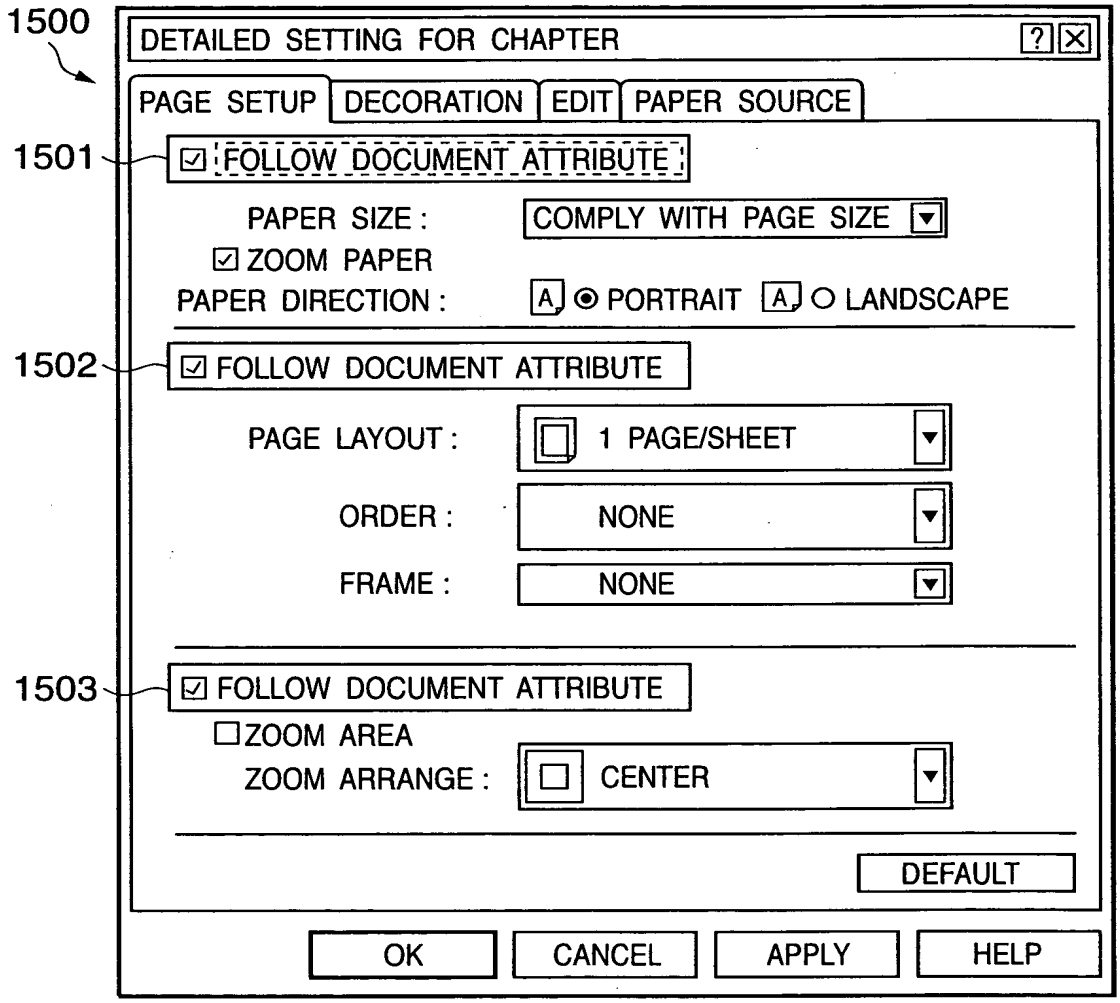
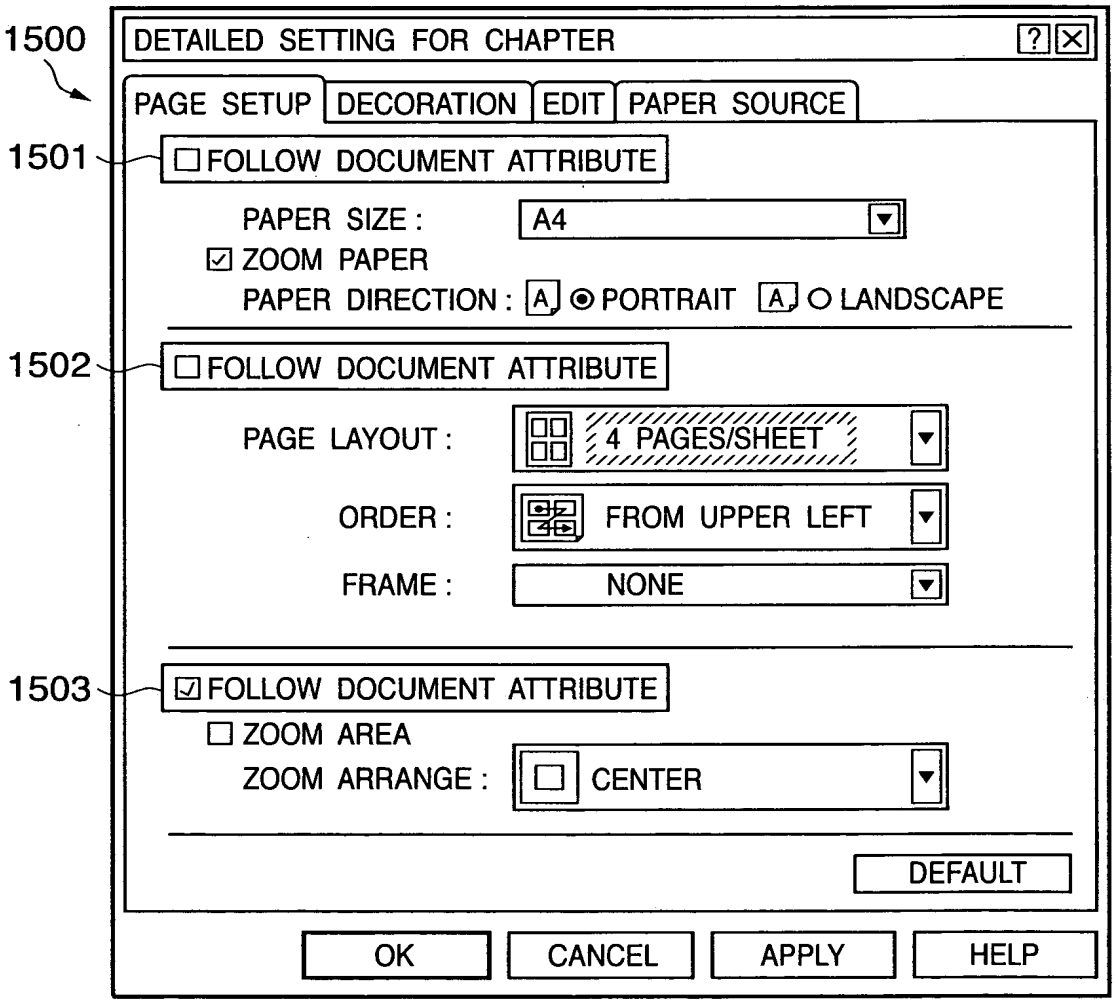

DETAILED SETTING FOR DOCUMENT
1400
PAGE SETUP
DECORATION
EDIT
PAPER SOURCE
PRINTING QUALITY
PAPER SIZE :
COMPLY WITH PAGE SIZE
1401
ZOOM PAPER
PAPER DIRECTION :
PORTRAIT
LANDSCAPE
PAGE LAYOUT :
1 PAGE/SHEET
ORDER :
NONE
FRAME:
NONE
1402
ZOOM AREA
ZOOM ARRANGE :
CENTER
DEFAULT
OK
CANCEL
APPLY
HELP

FIG. 15


1500
DETAILED SETTING FOR CHAPTER
PAGE SETUP
DECORATION
EDIT
PAPER SOURCE
1501
FOLLOW DOCUMENT ATTRIBUTE
PAPER SIZE :
COMPLY WITH PAGE SIZE
ZOOM PAPER
PAPER DIRECTION :
PORTRAIT
LANDSCAPE
1502
FOLLOW DOCUMENT ATTRIBUTE
PAGE LAYOUT :
1 PAGE/SHEET
ORDER :
NONE
FRAME :
NONE
1503
FOLLOW DOCUMENT ATTRIBUTE
ZOOM AREA
ZOOM ARRANGE :
CENTER
DEFAULT
OK
CANCEL
APPLY
HELP

# FIG. 16


1500
DETAILED SETTING FOR CHAPTER
PAGE SETUP
DECORATION
EDIT
PAPER SOURCE
1501
FOLLOW DOCUMENT ATTRIBUTE
PAPER SIZE :
A4
ZOOM PAPER
PAPER DIRECTION :
PORTRAIT
LANDSCAPE
1502
FOLLOW DOCUMENT ATTRIBUTE
PAGE LAYOUT :
4 PAGES/SHEET
ORDER :
FROM UPPER LEFT
FRAME :
NONE
1503
FOLLOW DOCUMENT ATTRIBUTE
ZOOM AREA
ZOOM ARRANGE :
CENTER
DEFAULT
OK
CANCEL
APPLY
HELP

# FIG. 17

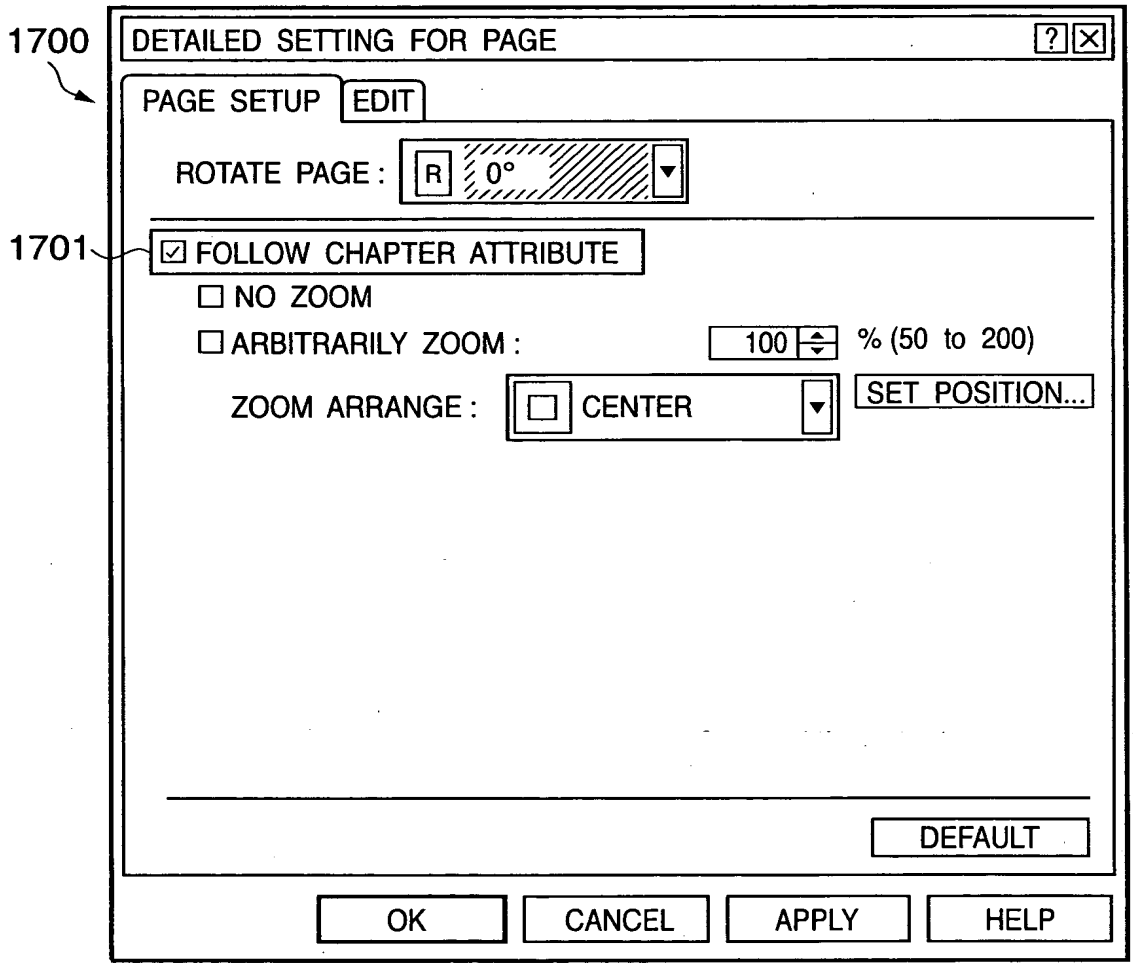

1700
DETAILED SETTING FOR PAGE
PAGE SETUP
EDIT
ROTATE PAGE :
R
0°
1701
FOLLOW CHAPTER ATTRIBUTE
NO ZOOM
ARBITRARILY ZOOM :
100
% (50 to 200)
ZOOM ARRANGE :
CENTER
SET POSITION...
DEFAULT
OK
CANCEL
APPLY
HELP

FIG. 18

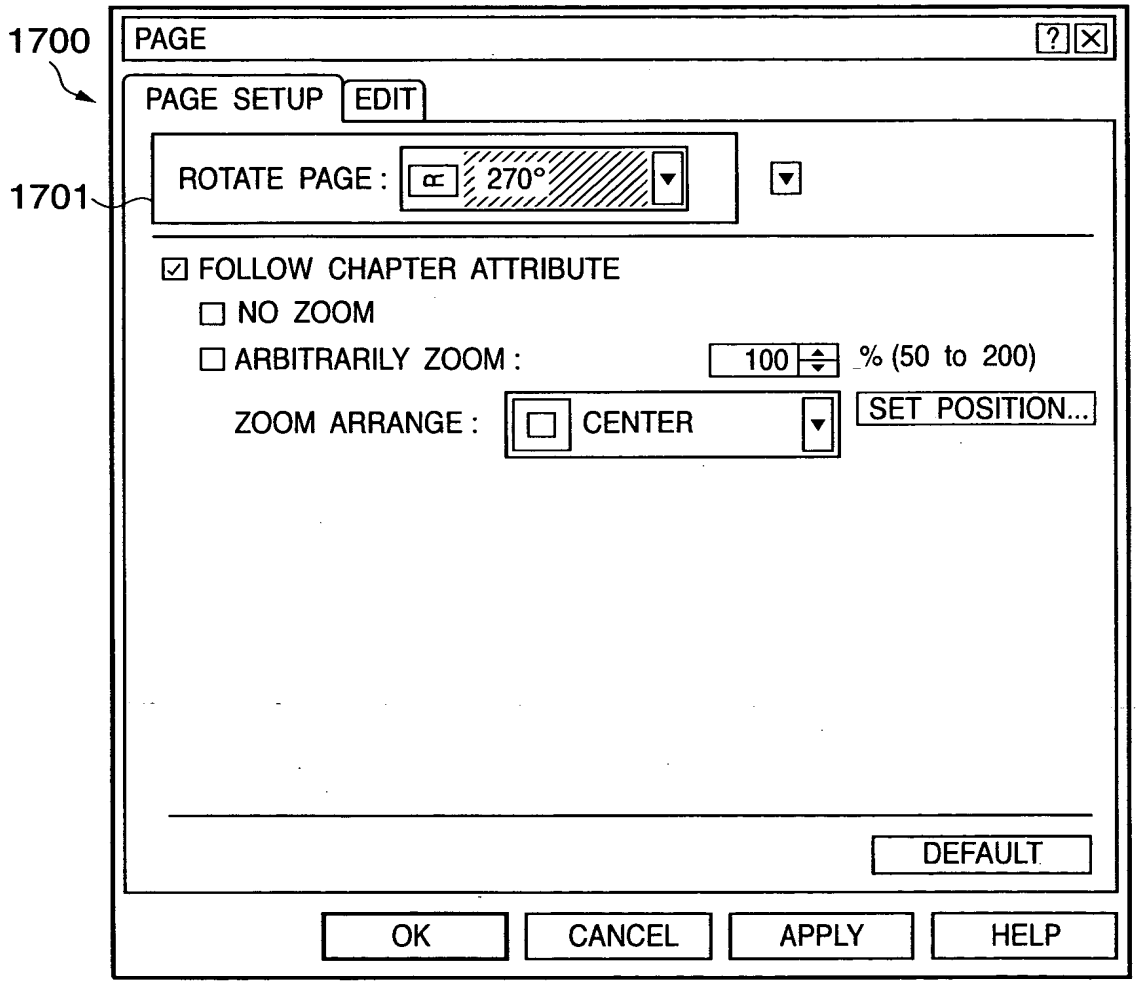

1700
PAGE
PAGE SETUP
EDIT
1701
ROTATE PAGE :
270°
FOLLOW CHAPTER ATTRIBUTE
NO ZOOM
ARBITRARILY ZOOM :
100
% (50 to 200)
ZOOM ARRANGE :
CENTER
SET POSITION...
DEFAULT
OK
CANCEL
APPLY
HELP

FIG. 19

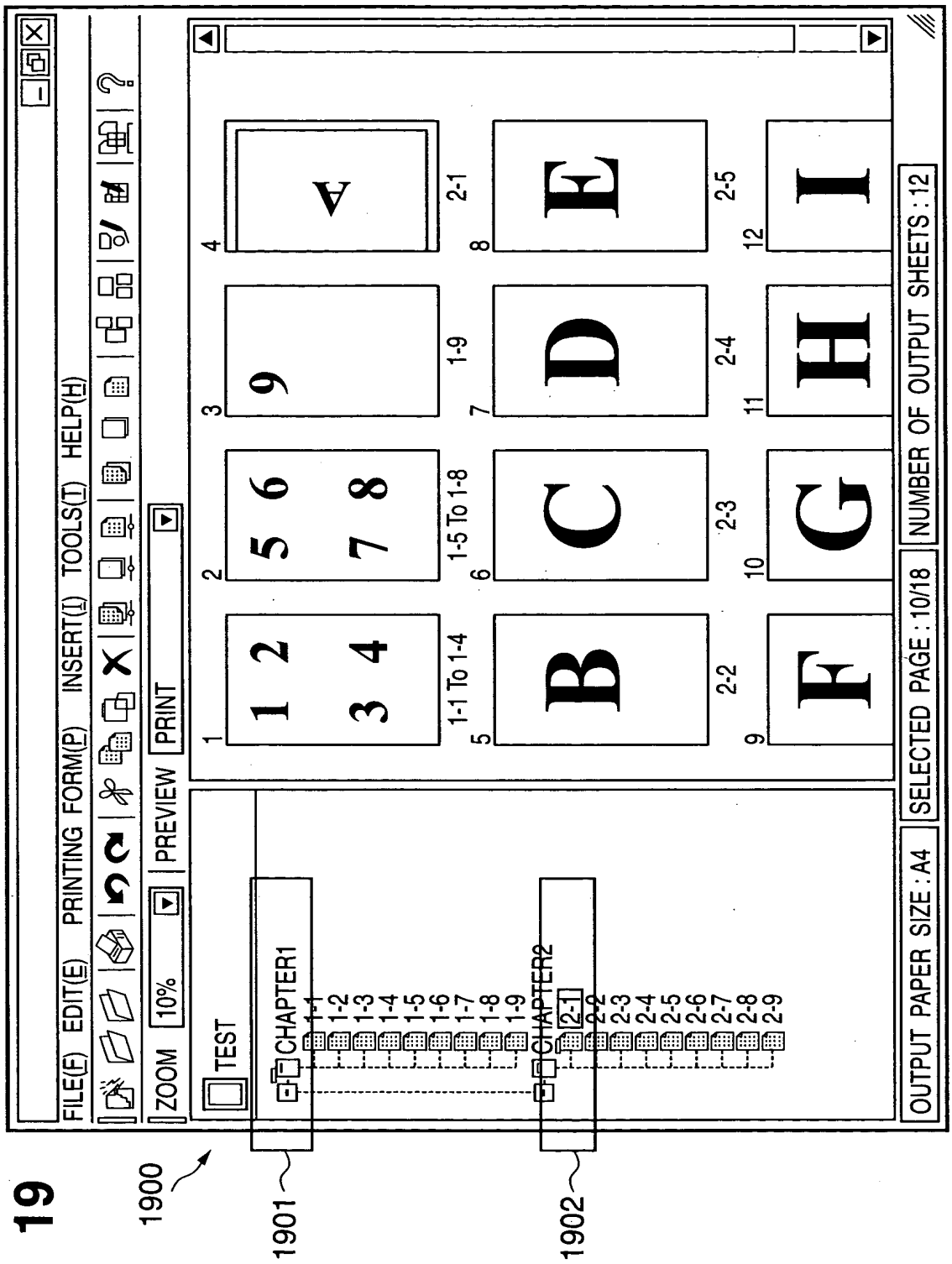

FILE(F) EDIT(E) PRINTING FORM(P) INSERT(I) TOOLS(T) HELP(H)
ZOOM 10% PREVIEW PRINT
TEST
CHAPTER1
1-1
1-2
1-3
1-4
1-5
1-6
1-7
1-8
1-9
CHAPTER2
2-1
2-2
2-3
2-4
2-5
2-6
2-7
2-8
2-9
1 2 3 4
5 6 7 8
9
A
B
C
D
E
F
G
H
I
1-1 To 1-4
1-5 To 1-8
1-9
2-1
2-2
2-3
2-4
2-5
OUTPUT PAPER SIZE : A4
SELECTED PAGE : 10/18
NUMBER OF OUTPUT SHEETS : 12
1900
1901
1902

FIG. 20

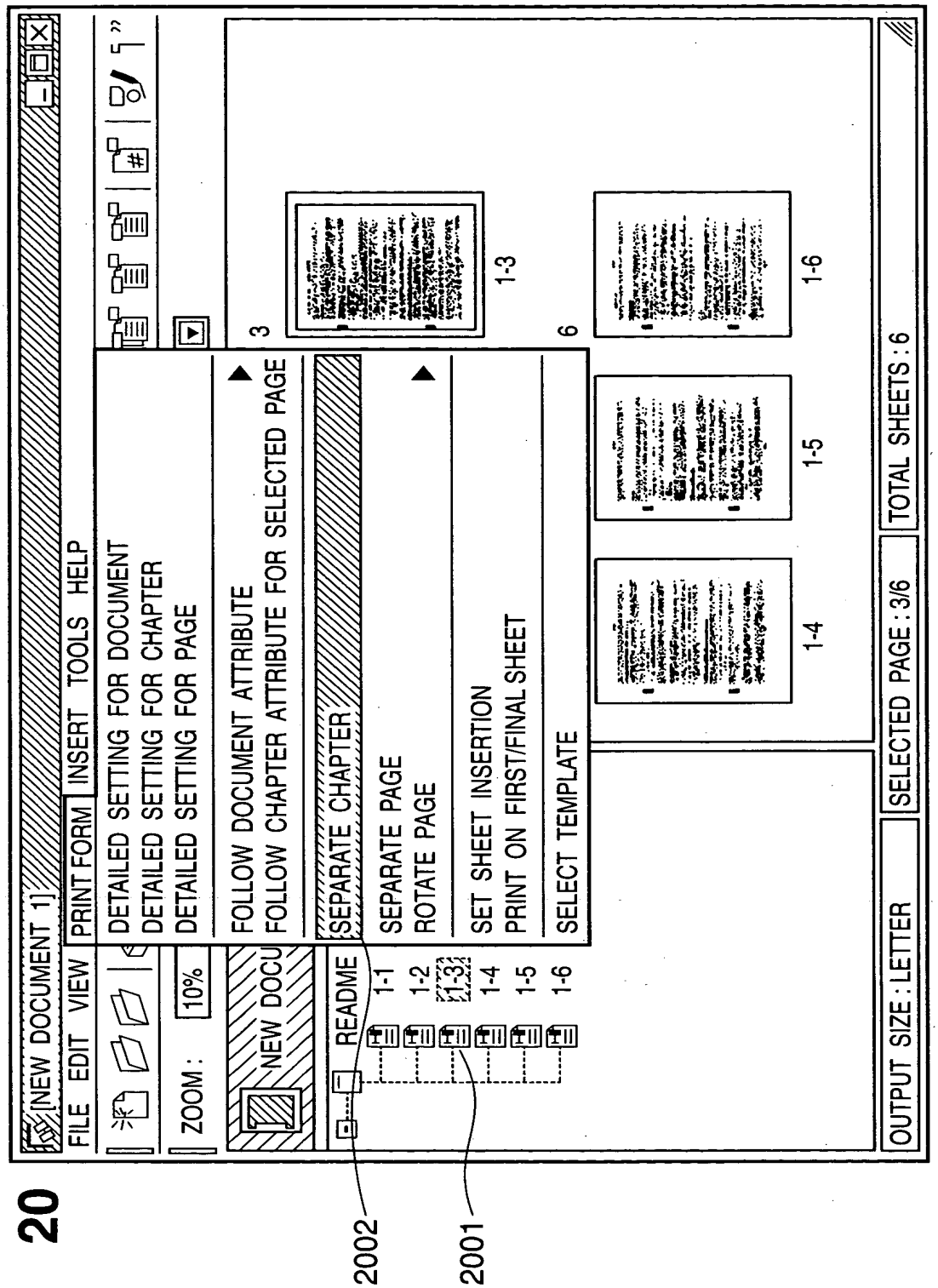

NEW DOCUMENT 1]
FILE EDIT VIEW PRINT FORM INSERT TOOLS HELP
ZOOM: 10%
DETAILED SETTING FOR DOCUMENT
DETAILED SETTING FOR CHAPTER
DETAILED SETTING FOR PAGE
FOLLOW DOCUMENT ATTRIBUTE
FOLLOW CHAPTER ATTRIBUTE FOR SELECTED PAGE
SEPARATE CHAPTER
SEPARATE PAGE
ROTATE PAGE
SET SHEET INSERTION
PRINT ON FIRST/FINAL SHEET
SELECT TEMPLATE
NEW DOCU
README
1-1
1-2
1-3
1-4
1-5
1-6
3
6
OUTPUT SIZE : LETTER
SELECTED PAGE : 3/6
TOTAL SHEETS : 6
2002
2001

FIG. 21

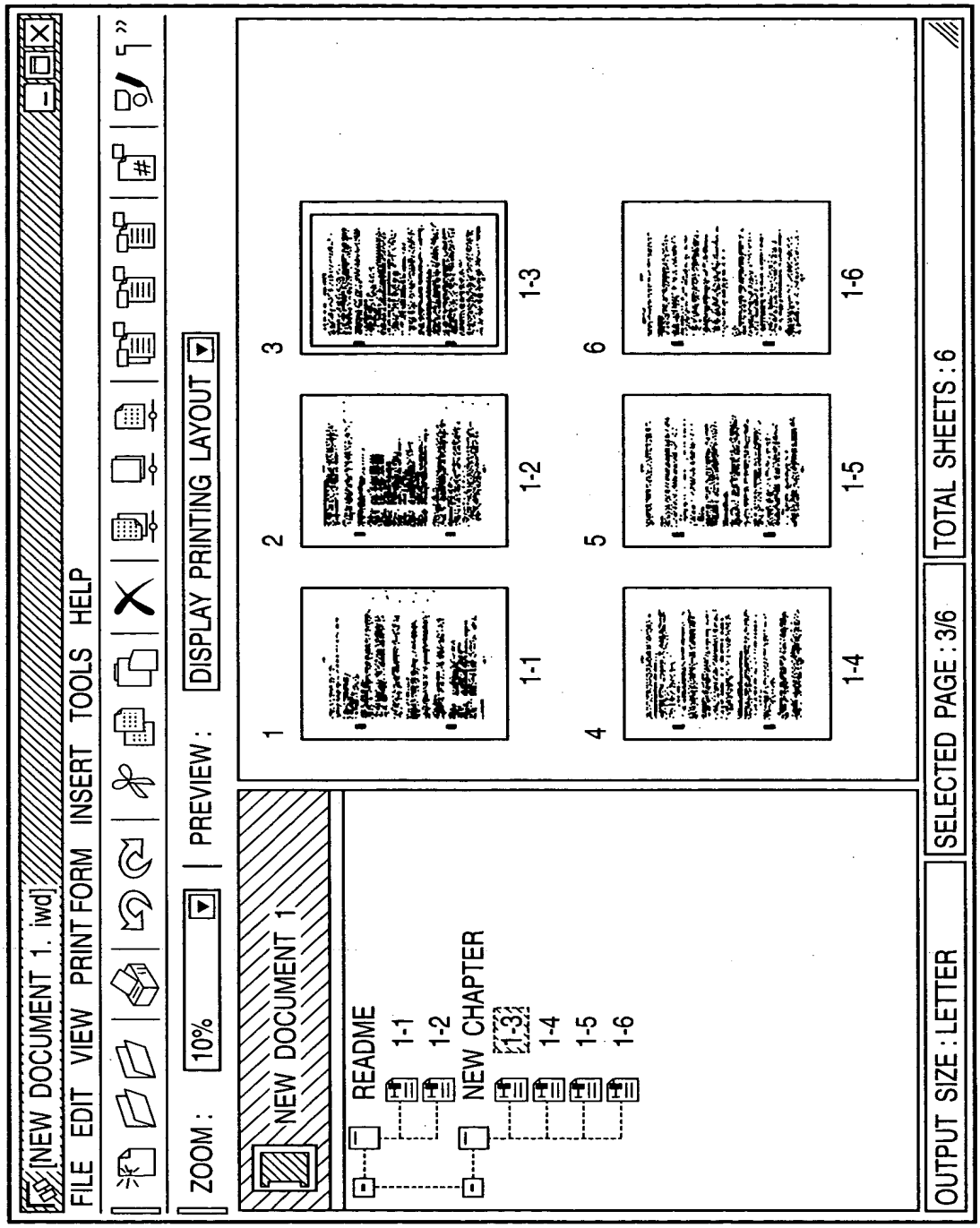

[NEW DOCUMENT 1. iwd]
FILE EDIT VIEW PRINT FORM INSERT TOOLS HELP
ZOOM : 10% | PREVIEW : DISPLAY PRINTING LAYOUT
NEW DOCUMENT 1
README
1-1
1-2
NEW CHAPTER
1-3
1-4
1-5
1-6
1
2
3
4
5
6
1-1
1-2
1-3
1-4
1-5
1-6
OUTPUT SIZE : LETTER
SELECTED PAGE : 3/6
TOTAL SHEETS : 6

FIG. 22

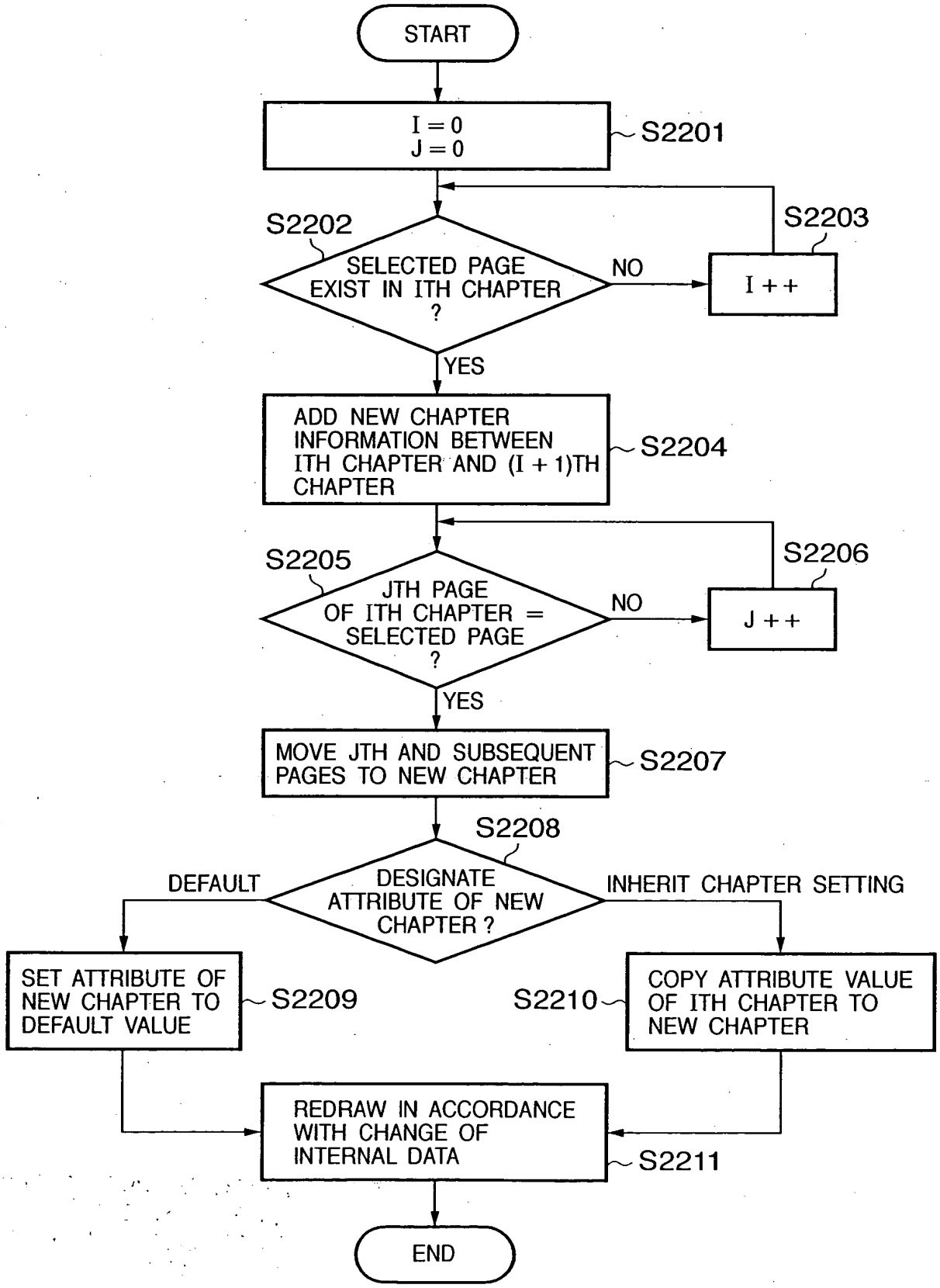
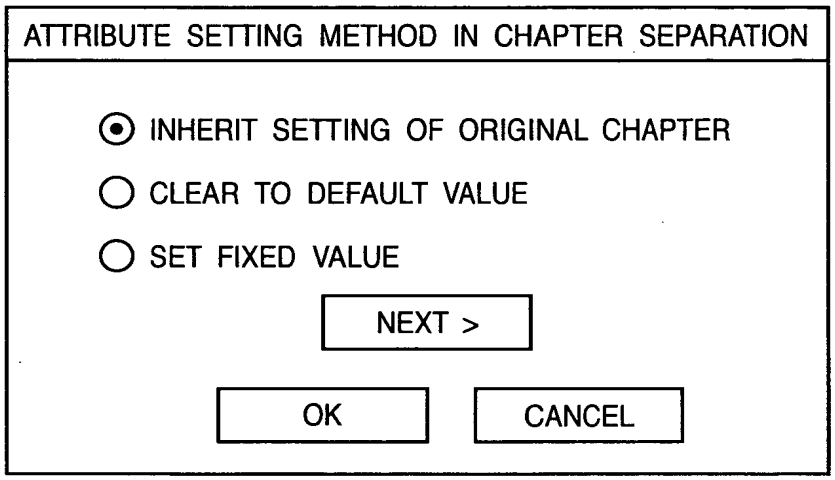

START
I = 0
J = 0
S2201
S2202
SELECTED PAGE EXIST IN ITH CHAPTER ?
NO
I ++
S2203
YES
ADD NEW CHAPTER INFORMATION BETWEEN ITH CHAPTER AND (I + 1)TH CHAPTER
S2204
S2205
JTH PAGE OF ITH CHAPTER = SELECTED PAGE ?
NO
J ++
S2206
YES
MOVE JTH AND SUBSEQUENT PAGES TO NEW CHAPTER
S2207
S2208
DESIGNATE ATTRIBUTE OF NEW CHAPTER ?
DEFAULT
INHERIT CHAPTER SETTING
SET ATTRIBUTE OF NEW CHAPTER TO DEFAULT VALUE
S2209
S2210
COPY ATTRIBUTE VALUE OF ITH CHAPTER TO NEW CHAPTER
REDRAW IN ACCORDANCE WITH CHANGE OF INTERNAL DATA
S2211
END

FIG. 23


ATTRIBUTE SETTING METHOD IN CHAPTER SEPARATION
INHERIT SETTING OF ORIGINAL CHAPTER
CLEAR TO DEFAULT VALUE
SET FIXED VALUE
NEXT >
OK
CANCEL